Risk Analysis of the Upper Eocene Yegua Play, a Gravitational Collapse Structure, South Burgos Basin, Northwestern Mexico

Daniel Olivares Ramos, Irving R. Arvizu Gutiérrez, Alberto Marino Castañón, Baltazar Hernández Sánchez, and Magda L. Rodríguez Pedraza

Pemex PEP

ABSTRACT

The risk analysis of Yegua Gravitational Collapse Structure Play (GCS) in the Burgos Basin, northwestern Mexico, is arranged to project "actualization and evaluation of risk maps of the Yegua-Jackson plays." The GCS is slightly oriented to the west and originated for late pulsation of Laramide Orogeny, causing a regional mass movement that removed preexisting sediments such as the Jackson, Yegua, and Cook Mountain formations.

The main goal is actualize the geological-structural framework and sedimentary model by means of recent geologic and geophysical integration and interpretation and well productions, too valid the exploratory opportunities carter, identify the associate risks and opportunities areas utilizing SIMAREP® (*Sistema de Mapas de Riesgo de Exploración y Producción*) for evaluation of the petroleum system. For this were used regional maps, integration of geological-geophysical information and a database (79 wells) for well correlations, thickness distributions, facies analysis, paleontological data, petrophysics-petrography analysis, production tests, and 28 core descriptions of 10 wells.

We define two discontinuities: lower and upper surfaces that cover the play. Besides letting us identify the different kind of seismic facies that together with the electrofacies and cores defined interpretation the four deposits that occurred during deposition of upper sequence "third-order" in the Priabonian (33.3–34.65 Ma). The depositional settings vary north to south from middle neritic to bathyal environments. The GCS covers an area of approximately 2950 km^{2}m. Finally, the results of risk maps give us opportunities yet for economic-petroleum interest along the play.

Olivares Ramos, D., I. R. Arvizu Gutiérrez, A. Marino Castañón, B. Hernández Sánchez, and M. L. Rodríguez Pedraza, 2011, Risk analysis of the Upper Eocene Yegua play, a gravitational collapse structure, South Burgos Basin, Northwestern Mexico: Gulf Coast Association of Geological Societies Transactions, v. 61, p. 793.